

EPA Update on NO_x Regulation

2002 NETL Conference on SCR and SNCR

May 15, 2002

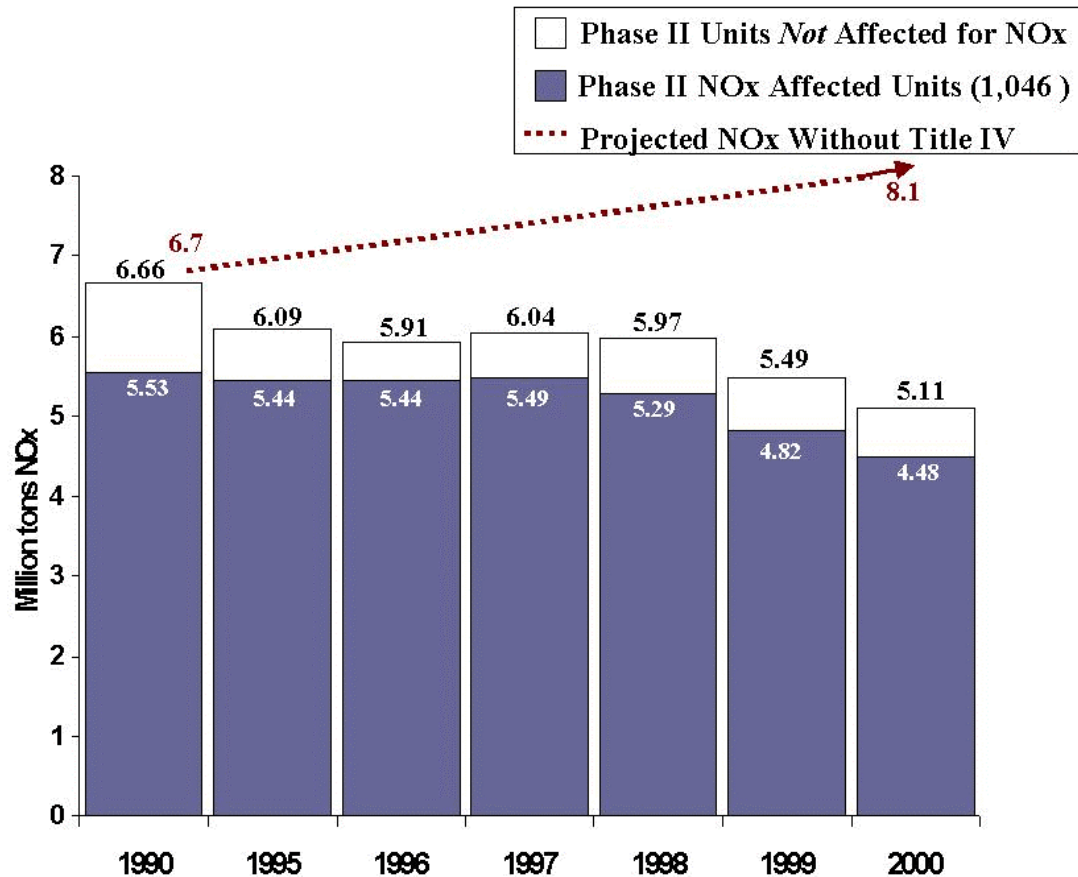
Overview

- Title IV NO_x Program
- OTC NO_x Budget Program
- NO_x SIP call/Section 126 rulemakings
- Future NO_x regulation

Title IV NO_x Program

- Program implemented in two phases, with 1,046 coal-fired units subject to NO_x limits based on boiler type
- For 2000, 1045 units met compliance through either: (1) standard emission limitation, (2) emissions averaging, or (3) an alternative emission limitation
- One unit failed to meet emission limit in 2000 – unit assess with a monetary penalty

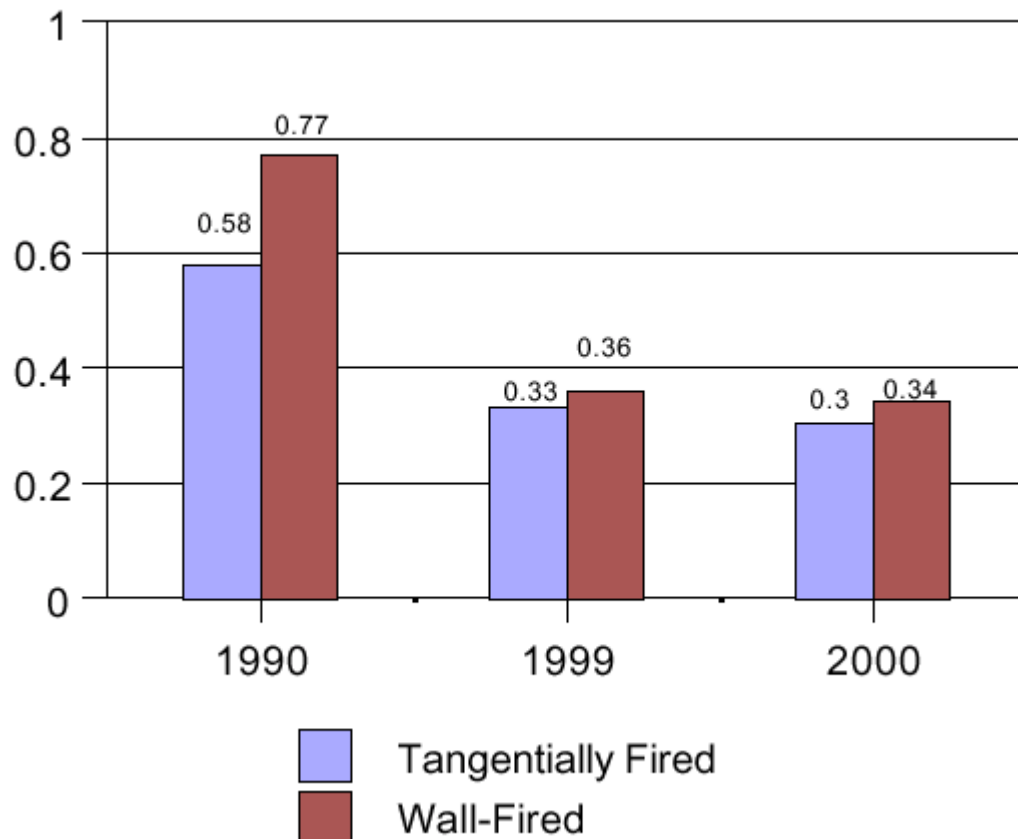
NOx Emissions for Title IV Sources



- Units reduced overall NOx emissions by 23 percent from 1990 levels; 7 percent from 1999 levels

NOx Emissions for Title IV Sources

Average NOx Emission Rate (lb/mmBtu) for 1990, 1999 and 2000 by Boiler Type for all Tangentially Fired and Wall-Fired Title IV Affected Units

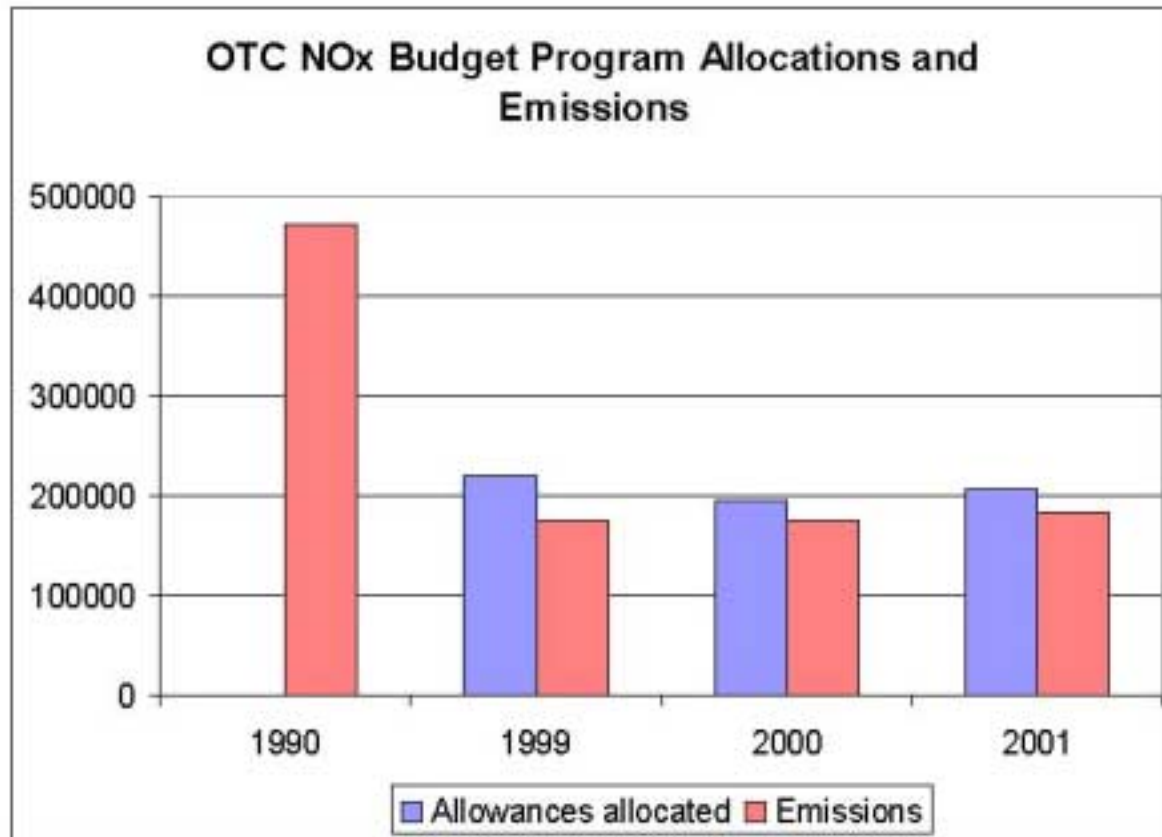


- The 2000 average NOx emission rates have slightly dropped from the 1999 average NOx emission rate for both tangentially-fired and wall-fired units.
- These emission rates are well below the required limits set for Phase II NOx affected units of 0.40 and 0.46 lb/mmBtu.

OTC NO_x Budget Program

- Trading program implemented in two phases, beginning in 1999 and requiring further reductions in 2003
- Nine States (CT, DE, MD, MA, NH, NJ, NY, PA, and RI) and DC participated in 2001
- 970 affected sources in 2001

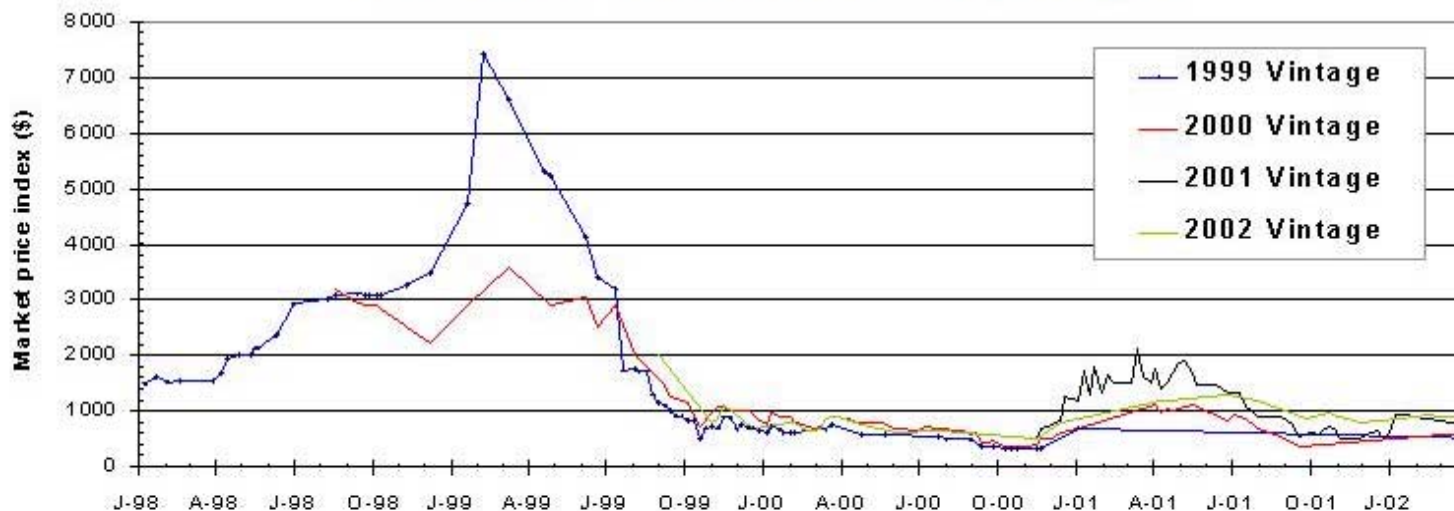
OTC NO_x Budget Program



- Affected sources emitted at a level of about 12 % below 2001 allocations
- 78,746 banked allowances (1999 through 2001 vintages)

OTC NO_x Budget Program

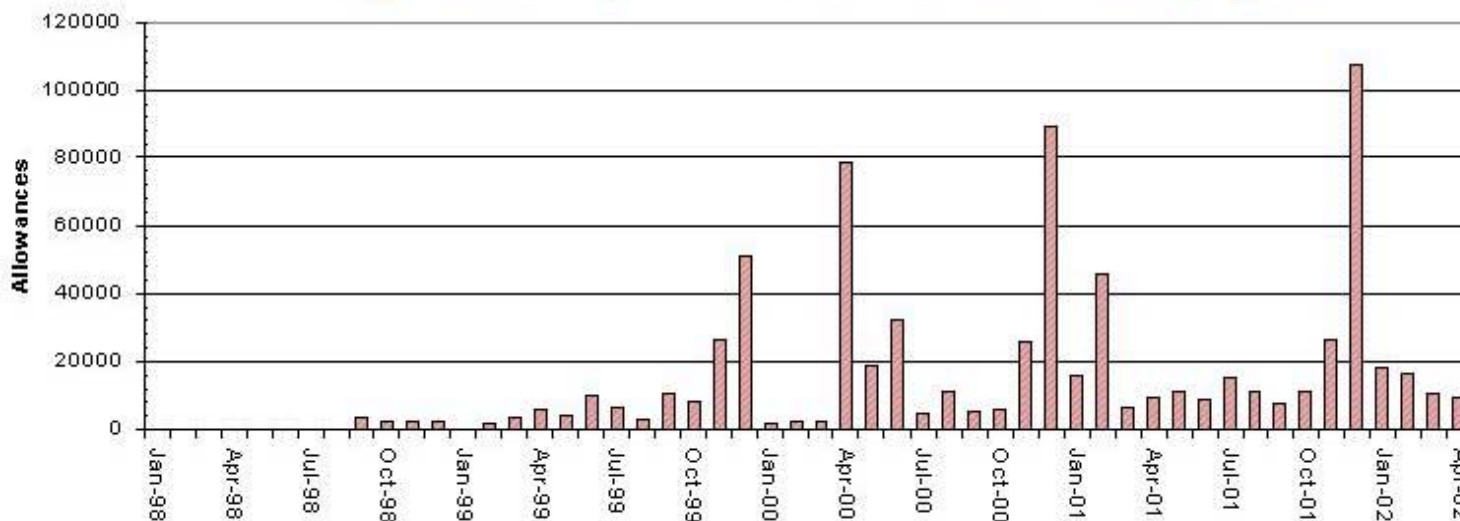
Market Price Index for the OTC NO_x Budget Program



- Since 1998, over 740,500 allowances transferred through 7,564 transactions

- Prices stabilized after state rulemaking completed and control actions taken

Monthly Transfers Reported to the NO_x Allowance Tracking System



- The prices displayed in the graphic are reported by several brokerages and publications, including Cantor Fitzgerald, LP[®], and Natsource LLC[®].

NO_x SIP call/Section 126 Update

- DC Circuit Court upheld most aspects of NO_x SIP call and Section 126 Rule
- EPA is currently responding or has responded to remands on several issues that include:
 - Electrical generating unit growth rates
 - cogeneration unit definition
 - Geographic coverage
 - Internal combustion emission reduction requirements

NO_x SIP call/Section 126 Update

- In February 2002, EPA issued a noticed of proposed rulemaking:
 - continue the classification of cogenerators as EGUs, and presented support for that classification
 - revise the control levels for stationary internal combustion engines
 - exclude portions of Georgia, Missouri, Alabama, and Michigan and exclude Wisconsin entirely
 - Compliance date of May 31, 2004, except for sources in Georgia and Missouri which would have May 1, 2005
- In May 2002, EPA issued a notice in response to remand:
 - indicating method for estimating growth in emissions from EGUs was reasonable

NO_x SIP call/Section 126 Update

- Status of State Rules:
 - 13 States with approved SIPs:
 - CT, DC, DE, MA, MD, NJ, NY, PA, and RI with May 2003 compliance date
 - IL, IN, AL, and KY with May 2004 compliance date
 - Proposed approval notices for TN, SC, and WV
 - OH, VA, and NC will submit final SIPs in next 2-3 months
- Status of Installation of controls
 - Use of SCR with a mix of other innovative controls
 - Over 70 GW of SCR announced or installed
 - Achieving early reduction credits

Future NO_x Regulation

- NAAQS for PM fine and 8 hour ozone
- Regional Haze
- Legislative proposals

Clear Skies Initiative

2004: The NO_x SIP call (summertime NO_x cap in 20 Eastern States)

2004

2008: Clear Skies NO_x Phase I (2.1 million ton annual cap is assigned to two Zones, with trading programs)

2008

2010: Clear Skies Hg Phase I (26 ton annual cap with national trading program)

2010: SO₂ Phase I (4.5 million ton annual cap with national trading program)

2012

2018: Clear Skies NO_x Phase II (1.7 million ton annual cap is assigned to two Zones with trading programs)

2016

2018: Clear Skies Hg Phase II (15 ton annual cap with national trading program)

2018: Clear Skies SO₂ Phase II (3.0 million ton annual cap with national trading program)

2020

Clear Skies NOx Program

- The Clear Skies Initiative has two trading zones for NOx.



NOx Caps Under The Clear Skies Initiative									
	2000 Emissions			2008 Caps			2018 Caps		
	Total	Zone 1	Zone 2	Total	Zone 1	Zone 2	Total	Zone 1	Zone 2
Caps *	5.1 million tons	4.35 million tons	750,000 tons	2.1 million tons	1.582 million tons	538,000 tons	1.7 million tons	1.162 million tons	538,000 tons
(effective emissions rate)	(0.40 lb/mmBtu)	(0.41 lb/mmBtu)	(0.33 lb/mmBtu)	(0.16 lb/mmBtu)	(0.15 lb/mmBtu)	(0.24 lb/mmBtu)	(0.13 lb/mmBtu)	(0.11 lb/mmBtu)	(0.24 lb/mmBtu)

* Numbers for 2000 represent actual emission levels, not caps.

- Significant NOx reductions are required in the East to protect human health and the environment. Less stringent reductions are necessary in the West to maintain good visibility. Therefore, the Clear Skies Initiative creates two trading zones. There would be no trading between the two zones to ensure that the different air quality goals can be met.